

Headquarters U.S. Air Force

Integrity - Service - Excellence

Asia Pacific Clean Energy Summit

August 14, 2012



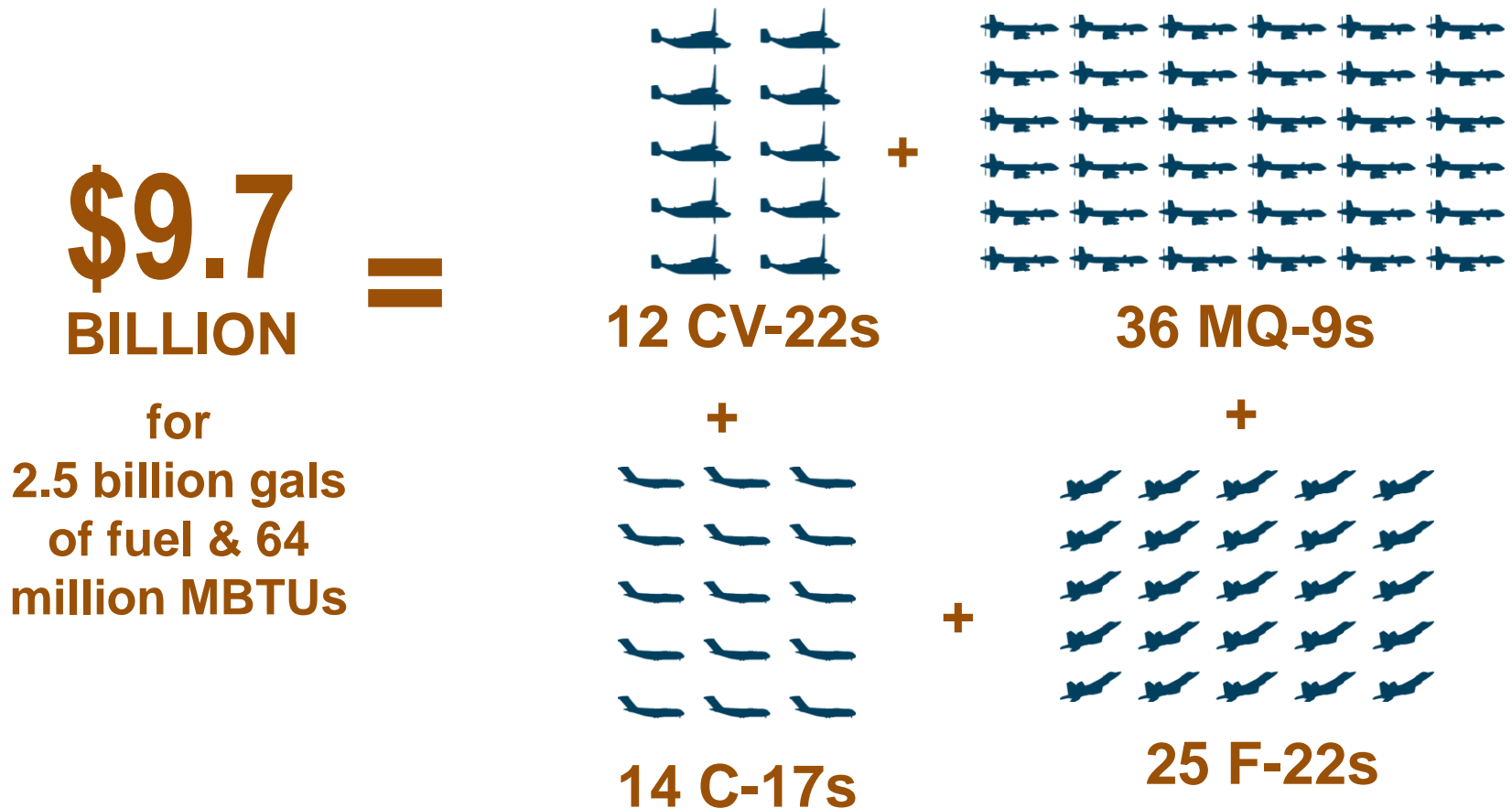
**Dr. Kevin Geiss
Deputy Assistant Secretary
Energy**

U.S. AIR FORCE



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Air Force Energy Consumption



Reinvesting energy savings into the mission



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Air Force Energy Plan



3-PART STRATEGY

- Reduce Demand
- Increase Supply
- Change the Culture



ENERGY VISION:
An Assured Energy Advantage in Air, Space and Cyberspace



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Reduce Demand – Aviation Operations

GOAL

Reduce Aviation Fuel Consumption 10% by 2015

PROGRESS:

- Fuel consumption reduced 4%
- \$165M saved
- Cost to move 1 ton of cargo 1 mile by air down 21%

NEXT STEPS:

- Expand AMC initiatives
- Optimize crew ratios





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Reduce Demand – Installations

GOAL

Reduce energy intensity by 3% annually

PROGRESS:

- Energy intensity down 16%
- 35 facilities & 812 homes LEED-certified
- \$274M investment (FY '11)

NEXT STEPS:

- 20% reduction in square footage by 2020
- Complete smart metering deployment
- Isolate process energy
- Partner with private industry through ESPC upgrades on base





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Reduce Demand – Vehicles

GOAL

Reduce ground vehicle fuel use 2% per year

PROGRESS:

- Reduced fuel use 4%
- 1.1 M gallons of fuel saved
- 955 hybrid electric vehicles in service

NEXT STEPS:

- Track fuel use in 30,000 vehicles with RFID
- Right-size fleet with most efficient vehicles





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Increase Supply – Aviation Operations

GOAL

**Acquire 50% of domestic aviation fuel requirements
via alternative fuel blend by 2016**

PROGRESS:

- First transcontinental flight, supersonic flight, aerial refueling
- 1.3M gals of alternative fuels purchased

NEXT STEPS:

- Testing third ATJ fuel pathway
- 400M gals of alternative fuel by 2016





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Increase Supply – Installations

GOAL

Increase use of renewable energy to 25% by 2025

PROGRESS:

- 6% of electricity from renewable sources in FY11
- 131 projects at 56 installations (37MW)

NEXT STEPS:

- 50 renewable projects under construction or awarded (19 MW)
- 6 Enhanced Use Leases totaling 512 - 635 MW





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Increase Supply – Vehicles

GOAL

Increase alternative fuel use by 10% annually

PROGRESS:

- Increased alternative fuel use for ground vehicles 67% since FY 08
- 1.7 M gals of fuel saved
- 10,000 E85 capable vehicles in service

NEXT STEPS:

- Realigning E85 vehicles to bases with alternative fuel resources
- Expand hydrogen-hybrid technology





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Advanced Power Technology Office (APTO)

PROGRESS:

- \$19 M in funding awarded (FY10-12)
- 14 research initiatives:
 - Vertical Axis Wind Turbines
 - Spider Microgrids
 - Hydrogen Refueling Station
 - Alternative Fuel Vehicle Fleet
 - Photovoltaic Solar Arrays





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Culture Change

GOAL

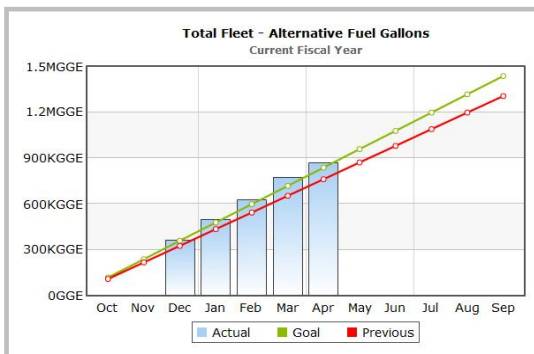
Make energy a consideration in all we do



Awareness



Training



Metrics



Performance

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Conclusion

“Fundamentally, we know that saving energy saves lives. Whenever our forces go into harm’s way, they must have the best tools possible. Improving our energy security can help us do that, and we really don’t have time to waste.”

– General Martin E. Dempsey
Chairman, Joint Chiefs of Staff
October 18, 2011



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